



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/817,598

04/02/2004

Wataru Abe

9333/373

3130

757

7590

02/07/2005

BRINKS HOFER GILSON & LIONE

P.O. BOX 10395

CHICAGO, IL 60610

EXAMINER

BROUSSARD, COREY M

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary	Application No. 10/817,598	Applicant(s) ABE, WATARU	
	Examiner Corey M. Broussard	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: Line 16 recites, "...member is the unlocked position." The word "in" appears to be missing. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Morrison et al. (PN 5,612,927). With respect to claim 1, Morrison teaches a magnetic disk device removable from an apparatus body, the magnetic disk device comprising: a case (12) including an elastic supporting member (col 5 lines 41-43, the case 12 is made of an elastic material such as nylon or some other plastic) and a locking member (34, 36); a driving unit (25) including a magnetic disk and a rotary driver operable to rotationally drive a magnetic disk (col 5 lines 44-49 define 25 as a typical hard drive inherently including a magnetic disk and rotary driver), wherein the driving unit is installed in the case; and a connector (42) for connecting the driving unit and the apparatus body; wherein the elastic supporting member is operable to elastically

support the driving unit (col 5 lines 41-43), force applied to the external of the case is operable to move the locking member to a locked position (see Fig. 3B) and an unlocked position (see Fig. 3A, 3C), and the driving unit is locked when the locking member is in the locked position and unlocked when the locking member is in the unlocked position (the force of the user inserting 12 into the bay 16 or the force of the carriage 74 on the case 12 is operable to move the case to a locked and unlocked position. The locking members 34, 36 are in a locked position when engaged by 82B, 84B and pulled in to ride on engaged camming surfaces 106D, 108D to the fully engaged and locked position, see col 9 lines 24-27, and in an unlocked position when the carriage 74 is in the home position, see Fig. 3A, 3C).

3. With respect to claim 3, Morrison teaches wherein the locking member (34, 36) is biased by a biasing member (82C) in the direction of the unlocked position (see Fig. 1, 3).

4. With respect to claim 14, Morrison teaches an apparatus comprising: a body (20) for removably mounting a magnetic disk device; the magnetic disk device comprising a case (12), a driving unit (25), and a connector (42); the driving unit including a magnetic disk and a rotary driver operable to rotationally drive the magnetic disk (col 5 lines 44-49 define 25 as a typical hard drive inherently including a magnetic disk and rotary driver), and being installed in the case; the connector operable to connect the driving unit to the body (col 9, lines 38-40); the case including an elastically supporting member operable to elastically support the driving unit (col 5 lines 41-43, the case 12 is made of an elastic material such as nylon or some other plastic), and a locking member (34, 36), the

Art Unit: 2835

locking member operable to move to a locked position and an unlocked position (The locking members 34, 36 are in a locked position when engaged by 82B, 84B and pulled in to ride on engaged camming surfaces 106D, 108D to the fully engaged and locked position, see col 9 lines 24-27, and in an unlocked position when the carriage 74 is in the home position, see Fig. 3A, 3C); and the body comprising a body connector (112) operable to connect with the connector of the magnetic disk device, and a switching unit (110) operable to move the locking member to the lock position.

5. With respect to claim 15, Morrison teaches wherein the locking member (34, 36) is coupled with a biasing member (82C).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, and 4-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison et al. (PN 5,612,927) in view of Sato et al. (PN 5,587,854). With respect to claim 1, Morrison teaches a magnetic disk device removable from an apparatus body, the magnetic disk device comprising: a case (12); a driving unit (25) including a magnetic disk and a rotary driver operable to rotationally drive a magnetic disk (col 5 lines 44-49 define 25 as a typical hard drive inherently including a magnetic disk and rotary driver), wherein the driving unit is installed in the case; and a connector (42) for

Art Unit: 2835

connecting the driving unit and the apparatus body; force applied to the external of the case is operable to move case to a locked position (see Fig. 3B) and an unlocked position (see Fig. 3A, 3C), and the driving unit is locked when the case is in the locked position and unlocked when the case is the unlocked position (the force of the user inserting 12 into the bay 20 or the force of the carriage 74 on the case 12 is operable to move the case, and therefore the driving unit, to a locked and unlocked position).

Morrison lacks an elastic supporting member and a locking member. Sato teaches a case (3) including an elastic supporting member (4c, 4d) and a locking member (4); wherein the elastic supporting member is operable to elastically support the driving unit (col 4, lines 20-23), force applied to the external of the case is operable to move the locking member to a locked (see Fig. 2A) and a unlocked position (see Fig. 3, 4 can be moved by an external force via 60), and the driving unit is locked when the locking member is in the locked position and unlocked when the locking member is in the unlocked position (see Fig. 2A). A person of ordinary skill could modify the sleeve (12) of Morrison to utilize the sliding locking member (4) and connector (2) of Sato where the key elements (60, 61, 62, 63) of Morrison would move the locking member to the locked position while still allowing the bay (16) to function as intended by Morrison. It would have been obvious to a person of ordinary skill in the art to combine the drive sleeve and bay of Morrison with the drive case of Sato to obtain a sleeve for use with a bay with a sliding locking member for the benefit of an increased protection from shock and the ability to remove the drive unit from the sleeve without disassembling the sleeve.

8. With respect to claim 2, Sato teaches wherein a front portion corresponds to a side of the magnetic disk device in which the connector is disposed (2, see Fig. 1, 2A) and a rear portion corresponds to the side opposite to the front portion (3b, see Fig. 2A), the locking member (4) reaches the unlocked position by moving towards the front portion of the magnetic disk device relative to the case, and the locking member reaches the locked position by moving towards the rear portion of the magnetic disk device relative to the case (see Fig. 2A, 3).

9. With respect to claim 3, Morrison teaches wherein the locking member is biased by a biasing member (82c, 84c) in the direction of the unlocked position (the wedge 82c, 84c biases the locking member through the case away from the first engager where the first engager is not locking the locking member, therefore the locking member is biased in an unlocked direction, see Fig. 1, 3).

10. With respect to claim 4, Sato teaches wherein the locking member (4) is disposed at an inner side of the case (see Fig. 2A), and has a switching protrusion exposed (6) at an outer surface of the case that may be accessed from the exterior of the case.

11. With respect to claim 5, Sato teaches wherein a side surface of the case has a slit (3d3), the locking member (4) is movable toward and away from the front portion of the magnetic disk device (see Fig. 2A, 3), and the switching protrusion (6) on the locking member is located in the slit (see Fig. 2B).

Art Unit: 2835

12. With respect to claim 6, Sato teaches wherein the side surface of the case has a groove (3d) extending forward and backward, and the slit (3d3) opens in the groove (see Fig. 2B).

13. With respect to claim 7, Morrison teaches a body connector (112) coupled with the connector (42); a first engager (60, 61) operable to engage a groove (26, 30); wherein the case (12) is in a locked position when the first engager is engaged with the groove of the case (see Fig. 1, 3B). Morrison lacks a second engager and switching protrusion. Sato teaches a switching protrusion (6) coupled with the locking member (4), a second engager (6b) operable to engage a second end (6a2) of the switching protrusion (6); wherein the locking member (4) is in the locked position (see Fig. 2A) when the second engager (6b) is engaged against the switching protrusion. The combination has the first engager (60, 61) of Morrison operable to engage the first end (6a) of the switching protrusion (6) of Sato (see Claim 1 above), wherein the locking member is in the locked position when the first engager is engaged with the first end of the switching protrusion and the second engager is engaged against the second end of the switching protrusion (key elements 60, 61 of Morrison engage the switching protrusion of Sato from one side and the lever 6b of Sato engages the other side). It would have been obvious to a person of ordinary skill in the art to combine the drive sleeve and bay of Morrison with the sliding sleeve of Sato to obtain a sliding drive sleeve that locked when inserted into a bay for the benefit of an increased protection from shock and the ability to remove the drive unit from the sleeve without disassembling the sleeve.

Art Unit: 2835

14. With respect to claim 8, Morrison teaches a body connector (112), the body connector operable to be coupled with a connector (42) of a magnetic disk device (25); a first engager (61, 60), the first engager operable to engage with a groove (26, 30) such that the front portion of the magnetic disk device may be inserted into the body connector (see Fig. 3B); and a second engager (82a, 84a), the second engager operable to engage the magnetic disk device in order to move the magnetic disk device to the unlocked position to allow the magnetic disk device to be removed (see Fig. 3C). Morrison lacks a locking member. Sato teaches a magnetic disk device (1) having a locking member (4), where the locking member can be moved into the locked position (see Fig. 2A) such that the front portion of the magnetic disk device may be inserted into the body connector, and where the locking member can be moved to the unlocked position to allow the magnetic disk device to be removed (see Fig. 1, 3). In the combination the first engager (60, 61) of Morrison slides along the groove (26, 30) where the locking member (4) of Sato is installed, the first engager moves along the groove and moves the locking member (by applying force to 6a of Sato) to the locked position, and when the device is ejected the second engager (82a, 84a) of Morrison moves the first engager away from locking the locking member thereby freeing and unlocking the locking member. It would have been obvious to a person of ordinary skill in the art to combine the magnetic disk device mounting system of Morrison with the locking member of Sato for the benefit of an increased protection from shock and the ability to remove the disk device from the mounting case without disassembling the case.

Art Unit: 2835

15. With respect to claim 9, Morrison teaches an engaging member (82b, 84b), the engaging member moving in response to the movement of the magnetic disk device (25) in a direction perpendicular to the direction of movement of the magnetic disk device (col 9, lines 21-27, the engaging member moves in an upward direction perpendicular to the rearward motion of the disk device). Morrison lacks a sliding member. Sato teaches a sliding member (6a) the sliding member coupled with the magnetic disk device (1) and moving with the magnetic disk device when the magnetic disk device is inserted (see Fig. 2A, 3, 4A). It would have been obvious to a person of ordinary skill in the art to combine the disk mounting system of Morrison with the sliding disk mounting case of Sato to obtain a disk drive in a protective case for insertion into a motorized bay where the drive is locked into place for the benefit of a disk drive with improved protection from shock and the ability to remove the disk drive from the protective case without disassembling the case.

16. With respect to claim 10, Morrison teaches wherein the movement of the engaging member (82b, 84b) toward the body connector (112) engages the second engager (82a, 84a) with the locking member (movement of the engaging member toward the body connector fully engages the second engager with the locking member through the case 12, see col 9, lines 21-27).

17. With respect to claim 11, Morrison teaches wherein the movement of the engagement member (82b, 84b) away from the body connector (112) moves the second engager (82a, 84a) away from the locking member (movement of the engaging

Art Unit: 2835

member away from the body connector distances the second engager from the locking member, col 10, lines 4-12).

18. With respect to claim 12, Morrison teaches wherein the second engager (82a, 84a) is integrated with the engaging member (82b, 84b, see col 7 lines 57-59).

19. With respect to claim 13, Morrison teaches an apparatus for mounting a magnetic disk device comprising: a case (12); a body connector (112), the body connector operable to connect with a connector (42) of a magnetic disk device (25); a first engager (60, 61), the first engager operable to move into a groove (26, 30) in a side surface of the case, and a second engager (82a, 84a). Morrison lacks a locking member and a switching protrusion. Sato teaches a case (3) including a locking member (4), the locking member operable to move to a locked position and an unlocked position (see Fig. 2A, 3), and a switching protrusion (6a) on the locking member in order to move the locking member to a locked and unlocked position. In the combination when the case 12 is inserted the first engager 60, 61 moves into the groove 26, 30 of Morrison, the switching protrusion 6a of Sato is engaged by the first engager and moved into a locked position when the case is fully inserted; when the case is ejected, the switching protrusion is engaged by the second engager through the case and moved away from the first engager into an unlocked position. It would have been obvious to a person of ordinary skill in the art to combine the drive mounting apparatus of Morrison with the protective case of Sato to obtain an improved drive mounting apparatus for the benefit of increased protection from shock and the convenience of removing the drive from the case without the need to disassemble the case.

Art Unit: 2835

20. With respect to claim 14, Morrison teaches an apparatus comprising: a body (20) for removably mounting a magnetic disk device; the magnetic disk device comprising a case (12), a driving unit (25), and a connector (42); the driving unit including a magnetic disk and a rotary driver operable to rotationally drive the magnetic disk (col 5 lines 44-49 define 25 as a typical hard drive inherently including a magnetic disk and rotary driver), and being installed in the case; the connector operable to connect the driving unit to the body (col 9, lines 38-40); the case including an elastically supporting member operable to elastically support the driving unit (col 5 lines 41-43, the case 12 is made of an elastic material such as nylon or some other plastic), and the body comprising a body connector (112) operable to connect with the connector of the magnetic disk device.

Morrison lacks locking member and a switching unit. Sato teaches a locking member (4) operable to move to a locked and unlocked position (see Fig. 2A, 3). In the combination the locking member when acted upon by the body (the locking member 4 of Sato would be internal of the case 12 of Morrison and the features of the bay acting upon the case also affect the locking member) makes up the switching unit. It would have been obvious to a person of ordinary skill in the art to combine the drive mounting apparatus of Morrison with the drive sliding locking case of Sato to obtain a drive bay for mounting a disk drive in a protective case with a sliding locking mechanism for the benefit of increased protection against shock and the ability to remove the drive from the case without the need to disassemble the case.

21. With respect to claim 15, Sato teaches wherein the locking member (4) is coupled with a biasing member (6c, see Fig. 2C).

22. With respect to claim 16, Sato teaches wherein the locking member (4) is disposed at an inner side of the case (see Fig. 2A), and includes a switching protrusion (6a) operable from the exterior of the case (see Fig. 1).

23. With respect to claim 17, Sato teaches wherein a side surface of the case includes a slit (3d3), the locking member (4) is movable toward and away from a front portion of the magnetic disk device (1), and the switching protrusion (6a) on the locking member is located in the slit (see Fig. 2B).

24. With respect to claim 18, Sato teaches wherein the side surface of the case has a groove (3d) extending forward and backward, and the slit (3d3) open in the groove (see Fig. 2B).

25. With respect to claim 19, Morrison teaches a first engager (60, 61) and a second engager (82a, 84a), the first engager engages the case (12) in order to move the case to the locked position (see Fig. 3B) by force for inserting the magnetic disk device (25) when the front portion of the magnetic disk device is inserted into the body connector (112, see Fig. 3B), and the second engager engages the case in order to move the case to the unlocked position (see Fig. 3C) by force for removing the magnetic disk device when the magnetic disk device is removed. Morrison lacks a locking member. Sato teaches a locking member (4). In the combination the locking member of Sato would be installed in the groove (26, 30) of Morrison so that the first engager moves the locking member to the locked position when the case is inserted and moves the locking member to an unlocked position (the locking member moved away from the first engager would no longer be maintained by the first engager and so be in a free and

Art Unit: 2835

unlocked position) when the case is removed. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the mounting apparatus of Morrison with the drive locking member of Sato to obtain an improved mounting apparatus for the benefit of improved protection from shock and the ability to remove the drive from the case without the need to disassemble the case.

26. With respect to claim 20, Morrison teaches wherein the body (20) further comprises a switching setting mechanism (74) operable to respond to the insertion of the magnetic disk device (25) and engage the second engager (82a, 84a) to the case when the magnetic disk device is inserted (col 9 lines 13-27). Morrison lacks a locking member. Sato teaches a locking member (4). In the combination the second engager engages the locking member through the case 12. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the mounting apparatus of Morrison with the drive locking member of Sato to obtain an improved mounting apparatus for the benefit of improved protection from shock and the ability to remove the drive from the case without the need to disassemble the case.

27. With respect to claim 21, Morrison teaches wherein the switching setting mechanism (74) is operable to move the second engager (82a, 84a) away from the magnetic disk device (25) after the second engager allows the case (12) to be disengaged when the magnetic disk device is removed (the second engagers move with the disk device until they pass the ramps 106, 108 then the disk drive can be removed and moved away from the second engagers, see col 10 lines 4-12). Morrison lacks a locking member. Sato teaches a locking member (4). In the combination the switching

Art Unit: 2835

setting mechanism moves the second engager to move the locking member (force applied to the case 12 moves the locking member inside) away from the first engager freeing it to an unlocked position; then the case is disengaged after the ramps are passed and the disk device is then moved away from the second engager. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the mounting apparatus of Morrison with the drive locking member of Sato to obtain an improved mounting apparatus for the benefit of improved protection from shock and the ability to remove the drive from the case without the need to disassemble the case.

28. With respect to claim 22, Morrison teaches an engaging member (82b, 84b), the engaging member moving in response to the movement of the magnetic disk device (25) in a direction perpendicular to the direction of the movement of the magnetic disk device (col 9, lines 21-27, the engaging member moves in an upward direction perpendicular to the rearward motion of the disk device). Morrison lacks a sliding member. Sato teaches a sliding member (6a) the sliding member coupled with the magnetic disk device (1) and moving with the magnetic disk device when the magnetic disk device is inserted (see Fig. 2A, 3, 4A). It would have been obvious to a person of ordinary skill in the art to combine the disk mounting system of Morrison with the sliding disk mounting case of Sato to obtain a disk drive in a protective case for insertion into a motorized bay where the drive is locked into place for the benefit of a disk drive with improved protection from shock and the ability to remove the disk drive from the protective case without disassembling the case.

29. With respect to claim 23, Morrison teaches wherein the second engager (82a, 84a) is integrated with the engaging member (82b, 84b, see col 7 lines 57-59).

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Balzaretto et al. (6,252,765) demonstrating an alternative drive mounting apparatus. Nabetani et al. (5,889,649) and Harase (5,155,663) demonstrating alternative device connection means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey M. Broussard whose telephone number is 571 272 2799. The examiner can normally be reached on 7:30-5 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on 571 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2835

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CMB

cmb


LYNN FEILD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800